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Search for new resonances coupling to third generation quarks in pp collisions at 13 TeV at CMS (15' + 5')

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We present a search for new massive particles decaying to heavy-flavour quarks with the CMS detector at the LHC. Decay channels to vector-like top partner quarks, such as T' , are also considered. This results in a top-pair-like final state, as the T' decays to a W boson and bottom quark; however the reconstructed mass of the T' can be used to further signal discrimination. We use proton-proton collision data recorded at a centre-of-mass energy of 13 TeV. The search is performed in both hadronic and semileptonic decay channels of the top quark or of the top-partners. Due to the high momentum range in which these objects are produced, specific reconstruction algorithm and selections are employed to address the identification of these boosted signatures. The results are presented in terms of upper limits on the model cross section.

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